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**R**EPORT

# AIR DEFENSE ACTIVITY IN TANZANIA

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| NOCONTRACT- | Not Releasable to Contractors or Contractor/Consultants              |
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**AIR DEFENSE ACTIVITY IN TANZANIA**

1. The first Tanzanian SA-3 surface-to-air missile (SAM) sites were recently observed on [redacted] These SA-3 SAM sites in addition to previously identified air warning (AW) radar sites are indications of an effort to upgrade the air defense posture of this East African country. Air defense activity, as described in this report, includes only AW radar sites and SAM sites.

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2. [redacted] five AW radar sites have been identified in Tanzania (Figure 1). Chinese radars occupy all of these sites. The most recently observed electronics order-of-battle for each of these sites is provided in Table 1. Figure 2 depicts the Dar es Salaam AW Radar Facility Southwest.

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3. Additional evidence of radar activity was seen at Dar es Salaam Army Barracks Mgulani [redacted] the site of the abandoned Dar es Salaam Airfield Old [redacted] Two BAR LOCK, three FLAT FACE, and two SPOON REST radars were observed in a probable training mode at this installation [redacted]

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4. SA-3 SAM sites, support facilities, and equipment were seen for the first time in Tanzania [redacted] Tanzania is the first sub-Saharan country to receive this low-to-medium altitude SAM system. A total of four SA-3 sites, one temporary SA-3 support facility, and one probable SA-3 support facility under construction was identified in the vicinity of the capital city of Dar es Salaam (Figure 4). The table inset on Figure 4 summarizes the occupancy status and missile order-of-battle at each location. One of the occupied SA-3 sites is shown on Figure 5, and the temporary SA-3 support facility is depicted on Figure 6.

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**REFERENCES**

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**MAPS OR CHARTS**

AMS. Joint Operations Graphic (Air), Series 1501, Sheet SB 37-11 1st ed, Dec 67, scale 1:250,000 (CONFIDENTIAL) [redacted]

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**REQUIREMENT**

Project 143470NE

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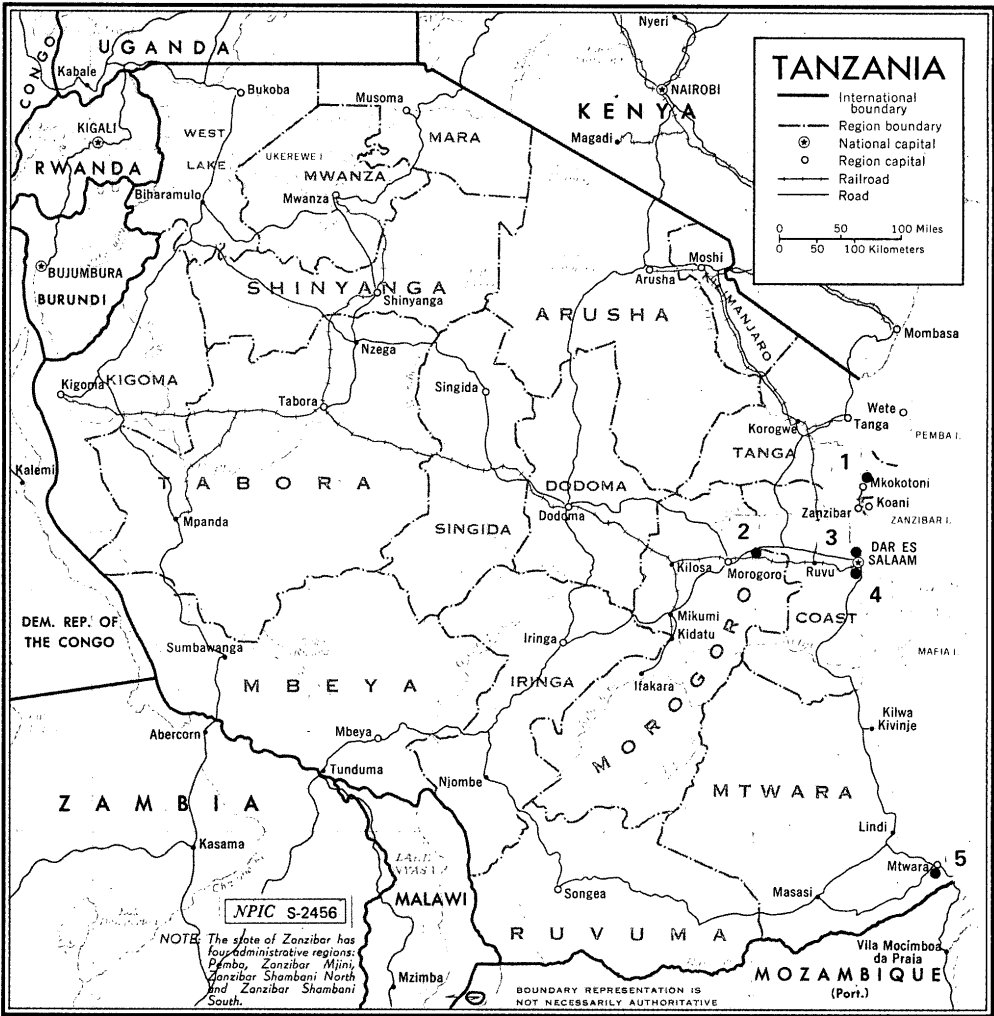


FIGURE 1. AW RADAR SITES IN TANZANIA (ITEMS KEYED TO TABLE 1)

Table 1. AW Radar Sites in Tanzania (Items keyed to Figure 1)

| Item | Name/Coordinates/BE No  | Status | Order-of-Battle             |
|------|---|--------|-----------------------------|
| 1    | Potoa AW Radar Fac<br>05-51-34S 039-17-27E<br>[redacted]            | Occ    | 1 poss CROSS SLOT           |
| 2    | Ngerengere Afld AW Radar Fac<br>06-43-50S 038-08-50E<br>[redacted]  | Occ    | 1 SLOT REST<br>1 KNIFE REST |
| 3    | Dar es Salaam AW Radar Fac<br>06-39-10S 039-37-20E<br>[redacted]    | Occ    | 2 CROSS SLOT                |
| 4    | Dar es Salaam AW Radar Fac SW<br>06-53-22S 039-10-39E<br>[redacted] | Occ    | 1 SLOT REST                 |
| 5    | Mikindani AW Radar Fac<br>10-17-30S 040-05-30E<br>[redacted]        | Occ    | 1 CROSS SLOT                |

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| Name/Coordinates/BE No   | Status | Order-of-Battle  |
|--|--------|--|
| Dar es Salaam SA-3 SAM Site (1)<br>06-44-00S 039-16-00E          | Occ    | 3 SA-3 four-rail launchers<br>(without missiles),<br>7 SA-3 transporters,<br>1 LOW BLOW,<br>1 acquisition radar  |
| Dar es Salaam SA-3 SAM Site (2)<br>06-49-00S 039-18-30E          | Occ    | 3 SA-3 four-rail launchers<br>(without missiles),<br>1 LOW BLOW,<br>1 acquisition radar  |
| Dar es Salaam SA-3 SAM Site (3)<br>06-49-00S 039-12-00E          | Ucon   | 3 SA-3 four-rail launchers<br>(not covered),<br>1 prob SA-3 four-rail launcher<br>(in travel mode),<br>1 prob SA-3 transporter,<br>1 LOW BLOW antenna unit<br>1 LOW BLOW base unit |
| Dar es Salaam SA-3 SAM Site (4)<br>06-54-00S 039-17-00E          | Occ    | 3 SA-3 four-rail launchers<br>(without missiles),<br>2 SA-3 transporters,<br>1 LOW BLOW  |
| Dar es Salaam SA-3 SAM Support Facility<br>06-54-00S 039-17-00E  | Occ    | 3 poss SA-3 missiles,<br>15 SA-3 transporters,<br>12 SA-3 canister transporters  |
| Dar es Salaam Prob SA-3 Support Facility<br>06-55-00S 039-16-00E | Ucon   | ----   |

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FIGURE 4. SA-3 SAM SITES AND SUPPORT FACILITIES, DAR ES SALAAM

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## List of Conversion Factors by Classification

### UNITS OF LENGTH

| IF YOU HAVE     | MULTIPLY BY | TO OBTAIN       |
|-----------------|-------------|-----------------|
| MILLIMETERS     | 0.0394      | INCHES          |
| CENTIMETERS     | 0.3937      | INCHES          |
| INCHES          | 25.4000     | MILLIMETERS     |
| INCHES          | 2.5400      | CENTIMETERS     |
| FEET            | 0.3048      | METERS          |
| FEET            | 0.0003      | KILOMETERS      |
| YARDS           | 0.9144      | METERS          |
| METERS          | 3.2808      | FEET            |
| METERS          | 0.0005      | MILES(NAUTICAL) |
| METERS          | 1.0936      | YARDS           |
| KILOMETERS      | 3280.8400   | FEET            |
| KILOMETERS      | 0.6214      | MILES(STATUTE)  |
| KILOMETERS      | 0.5400      | MILES(NAUTICAL) |
| MILES(STATUTE)  | 1.6093      | KILOMETERS      |
| MILES(NAUTICAL) | 6076.1154   | FEET            |
| MILES(NAUTICAL) | 1.8520      | KILOMETERS      |
| MILES(NAUTICAL) | 1852.0000   | METERS          |

### UNITS OF MASS

| IF YOU HAVE    | MULTIPLY BY | TO OBTAIN      |
|----------------|-------------|----------------|
| KILOGRAMS      | 2.2046      | POUNDS(AVOIR.) |
| POUNDS(AVOIR.) | 0.4536      | KILOGRAMS      |
| SHORT TONS     | 0.9072      | METRIC TONS    |
| METRIC TONS    | 1.1023      | SHORT TONS     |
| METRIC TONS    | 0.9842      | LONG TONS      |
| LONG TONS      | 1.0160      | METRIC TONS    |

### UNITS OF VOLUME

| IF YOU HAVE  | MULTIPLY BY | TO OBTAIN    |
|--------------|-------------|--------------|
| LITERS       | 0.2642      | GALLONS      |
| LITERS       | 0.0063      | BARRELS(POL) |
| LITERS       | 0.0010      | CUBIC METERS |
| GALLONS      | 3.7854      | LITERS       |
| GALLONS      | 0.1337      | CUBIC FEET   |
| GALLONS      | 0.0238      | BARRELS(POL) |
| GALLONS      | 0.0038      | CUBIC METERS |
| BUSHELS      | 0.0352      | CUBIC METERS |
| CUBIC FEET   | 7.4805      | GALLONS      |
| CUBIC FEET   | 0.1781      | BARRELS(POL) |
| CUBIC FEET   | 0.0283      | CUBIC METERS |
| CUBIC YARDS  | 0.7646      | CUBIC METERS |
| BARRELS(POL) | 158.9873    | LITERS       |
| BARRELS(POL) | 42.0000     | GALLONS      |
| BARRELS(POL) | 5.6146      | CUBIC FEET   |
| BARRELS(POL) | 0.1590      | CUBIC METERS |
| CUBIC METERS | 1000.0000   | LITERS       |
| CUBIC METERS | 264.1721    | GALLONS      |
| CUBIC METERS | 35.3147     | CUBIC FEET   |
| CUBIC METERS | 28.3776     | BUSHELS      |
| CUBIC METERS | 6.2898      | BARRELS(POL) |
| CUBIC METERS | 1.3080      | CUBIC YARDS  |

### UNITS OF AREA

| IF YOU HAVE        | MULTIPLY BY | TO OBTAIN          |
|--------------------|-------------|--------------------|
| SQUARE CENTIMETERS | 0.1550      | SQUARE INCHES      |
| SQUARE INCHES      | 6.4516      | SQUARE CENTIMETERS |
| SQUARE FEET        | 0.0929      | SQUARE METERS      |
| SQUARE YARDS       | 0.8361      | SQUARE METERS      |
| SQUARE METERS      | 10.7639     | SQUARE FEET        |
| SQUARE METERS      | 1.1960      | SQUARE YARDS       |
| SQUARE METERS      | 1.0000      | CENTARES           |
| SQUARE METERS      | 0.0002      | ACRES              |
| SQUARE METERS      | 0.0001      | HECTARES           |
| ACRES              | 4046.8564   | SQUARE METERS      |
| ACRES              | 0.4047      | HECTARES           |
| HECTARES           | 10000.0000  | SQUARE METERS      |
| HECTARES           | 2.4711      | ACRES              |



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